X103

GARDEN CITY ATARI COMPUTER ENTHUSIASTS

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Victoria, B.C.
CANADA V8S 4G2

January/February 1992
~~March/April 1991~~

Atari News and Rumours

by Rowland Grant

Atari Corp is doing its two steps forward, one step back routine again. STylus, the writing pad computer will not be manufactured or released. While there is a great deal of interest in hand written input for computers, Atari's market survey revealed that few people would buy them. Too bad in a way, since Atari's software had a 98 percent accuracy rating in handwriting recognition. It is miles ahead of the competition. Atari is not the only company that is showing caution. Several computers have been released for the PC market with keyboard and optional input pad. Perhaps future Atari notebook computers will be designed to accept a writing pad as an accessory so all that research and development doesn't go to waste.

Atari has two development projects codenamed "Jaguar" and "Falcon". Jaguar is a game machine using a 68030 microprocessor and featuring 32-bit graphics and sound. It will use software in cartridges. There is no indication as to when (or if) it will be released. The Falcon project is more definite. It will be an advanced version of the TT using a 68040 microprocessor. The Falcon is rumoured to have broadcast quality 24-bit graphics and a 64-bit bus. It may also come with optical storage devices since advanced graphics systems require enormous amounts of digital storage. Atari intends to release this enhanced TT in 1992.

Optical read/write systems using 3.5 inch laser disks have been available for PC's and clones for some time. In Britain, a company called Power Computing has adapted IBM optical drives so that they can be handled through the DMA port of an ST. The drives use 3.5 inch optical media cartridges with a capacity of 128 megabytes. The cartridge looks like a standard 3.5 inch floppy, but there is a laser disk inside. It's not cheap though. The external optical drive goes for about two thousand dollars and each disk cartridge is about seventy dollars.

While we are on optical systems, Atari will not be releasing its own CD-ROM players after all. Rather, Atari will release its METADOS driver as freeware. This software will enable a TT to use a SCSI type CD-ROM player through the SCSI port. ST's will need a host adaptor such as those made by ICD to use CD-ROM players. ICD is rumoured to be revising its host adaptor software to make interfacing with CD devices easy. CD-ROM drives cost about 500 dollars or more in Canada.

For those who can't wait to get a Falcon TT with its 24-bit graphics, Dover Research has demonstrated the LEONARDO 24 card at a recent Chicago Computerfest. Unlike other cards it uses the standard Atari resolutions but allows over 16 million colors on the screen at once. Dover also makes boards that require higher resolution monitors if you want to go that route. Rumours are that LEONARDO 24 will be bundled with advanced drawing and video interfacing software. Lexicor is another source of 24-bit graphics. Their cards are available for most ST and TT models and will drive multi-sync and Atari 1224 Color monitors. The Lexicor boards give a resolution of 520x520 in true video color. In other words you can digitize a frame grab from a video tape without any change in colors. The next step would be to have image manipulating hardware and software like the Video Toaster card available for the Amiga.

ELECTION NOTICE

Elections for Garden City Computer Enthusiasts' executive officers will take place at the club's Annual General Meeting to be held January 16th. The elections take place at 7 p.m. on Thursday, the 16th of January 1991. Members interested in running for any of the following positions are urged to attend the meeting or forward their names to any member of the current executive.

President	Vice-president	Secretary	Treasurer
8-bit Librarian	16-bit Librarian	Editor	Directors

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Atari improved its desktop last year and released the new version as TOS 2.0x on the Mega STE's and TOS 3.0x on the TT's. The ROM chips for these versions contained 256KB compared to 192KB on the ROM chips in the standard ST's. So upgrading a ST with the new TOS would be a lot more complicated than changing ROM chips. In fact, Atari said that it would not be making upgrades for the older models. However Artifex in Germany has created a board that will enable ST's to upgrade to the TOS 2.0x level. To its credit, Atari has cooperated with Artifex and will be supplying the latest version, TOS 2.06, for use with the board. The new desktop has many of the features of Neodesk and other desktop replacements. It has the advantage of being in ROM. So it doesn't use up regular RAM memory, and it pops up right away. Neodesk is great, but with a couple of utilities it takes up about half of the memory in my 1040ST. Of course when you load a program, Neodesk is overwritten, thus Neodesk will run on a 520ST. Still, when you go back to desktop, Neodesk must load in again from disk. With a megabyte of RAM and Neodesk on a hard drive, I don't feel the need for TOS 2.06. But others may consider Artifex's TOS card a valuable upgrade.

Atari Canada has announced a wholesale price reduction of 15 to 20 percent on the Mega STE line. Atari hopes to make the line more attractive to ST users who would like to upgrade. The Mega STE's are priced according to RAM and hard drive options. The October retail prices were about $1500 CDN and up. Certainly, $1200 would be a more reasonable price for a Mega-1 with a 50 Meg hard drive. But probably not reasonable enough. I have seen 386SX clones, with the same extras, advertised for less. In fact, computer wars seem to have reached the stage where none of the established proprietary computers can compete in price any more. Apple, Atari and Amiga are all superior in many ways to the PC clones, but where new users are concerned, hardware price is the over-riding factor. Atari is hedging its bets by issuing a series of its own 386 clones. If Atari can't compete in price with its own Mega STE and TT lines, how can it do any better with clones?

While hard drives have to be add-ons for most ST models, the new 2.5 inch hard drives are small enough to fit inside a standard ST case. I understand that one developer in Britain has adapted these tiny hard drives for inclusion in the ST, perhaps replacing the 3.5 inch floppy. Another development (that may not be so new) is Atari's Robokit. Made and marketed by Atari in Britain, Robokit is an interface card and software that will enable a ST to run robots and other devices that can be constructed from mechanized Leggo.

Britain is now one of the most vital markets for Atari. Amiga was passing Atari in popularity there, but now Atari seems to be pulling ahead. Most of the games for the ST are made in Britain, whereas much of the business and technical software is made in Germany. The ST games. market is five times as large in Britain as in Germany. But few British industries use Atari products. While in Germany, ST's are seen in government offices, and large engineering firms like Siemens use hundreds of ST's. On this continent, Atari is pursuing niche markets such as publishing and electronic music. Atari made a significant presentation at the Seybold Electronic Publishing Show. Atari also makes a point of displaying its wares at all major electronic music shows. And Atari has finally got its act together regarding FCC approval of its computers. All of its recent submissions to the FCC have been approved as class B devices. This was accomplished by seeking expert advice before designing the final prototypes. Atari may be slow up top, but it's not entirely hopeless.

Rumours are that Antic Corporation is planning to dissolve itself as of December 31st 1991. A new, unrelated corporation will be set up, on January 1st 1992, to publish PC Home Journal. Antic closed down STart magazine without paying its bills and has refused to answer any questions about refunding subscriptions. There are rumours that Antic solicited STart renewals even after it suspended publication, which is unethical to say the least. All the revenue from STart is said to have gone towards funding PC Home Journal. Siphoning off funds from one company into another and then cutting off the original company with all the debts, was the kind of action that got the Principal Group into legal trouble in Alberta. It grieves me to see the management of Antic, that I used to admire, appearing to resort to this kind of chicanery. What is worse, the debts and potential legal problems may not be dischargeable with the wind-up of Antic Corp. As a result, all the assets, such as copywrited material from Antic, STart and the software enterprises may remain frozen, unavailable, indefinitely.

I noticed a statement from the producers of GFA BASIC to the effect that GFA BASIC version 2.0 is not public domain. Some years back, the interpreter part of GFA BASIC 2.0 appeared on a STart disk and more recently it was published again on an ST Format magazine disk. I have also noticed the GFA BASIC interpreter in public domain software catalogues. The statement went on to say that individuals may use and distribute the GFA BASIC 2.0 interpreter files freely. However, the manuals and the compiler files for GFA BASIC may not be copied or distributed. Since the GFA BASIC 2.0 interpreter does all that ST BASIC can do and more, and since GFA BASIC is free of bugs, has an excellent programming environment, is more advanced and structured (no line numbers) etc., let us all say THANKS once more to Frank Ostrowski.

Frank made an enormous contribuion to Atari XL/XE computers when he released Turbo BASIC to the public domain. Now he (and his associates) have done the same for the ST by making the GFA BASIC 2.0 interpreter free to all. The need is greater, of course. While the Atari

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BASIC computing environent on the XL/XE computers is the worst that I have experienced. So lets all switch to GFA BASIC 2.0! If you want the compiler and manuals, a complete GFA BASIC 2.0 system can be purchased for about $40.00. If you want to program seriously, GFA BASIC version 3.5 (and higher) will cost somewhat more. You can get almost identical versions for the ST, the Amiga and the PC (windows and all). The compiled code is as compact and as fast as what you would get from the best of C compilers. OK, I'll stop gushing. Perhaps members who have programmed in GFA BASIC, like Doug Skrecky, would like to write some articles on the topic.

Finally, I noticed an article in a recent Newsweek about a company in the States that caters to the exasperated. They have a shooting range, and they allow you to shoot up anything you like as long as you can get it through the door and it's not living. They have noticed recently that an increasing number of computers are being dragged in for execution. No. No Atari computers, understand? Anyway some people are getting their jollies by bumping off their PC's with a sub-machine gun. Just imagine doing a Valentine's day massacre on a lineup of IBM's Macs and Amigas. Of course after taking such drastic action you might regret your anger. In anticipation, Tusk Inc., the maker of a notebook PC (complete with keyboard and writing input tablet), advertises that its products come in bulletproof composite casings. That's all folks!

PROGRAMING???

I would like to thank Ed Hall of Yellowknife N.W.T. for mentioning that there exists no sport schedule generating program on the Atari 8-bit systems. Unfortunately as I no longer own an 8 bit system I could not follow up on this programing idea. Such programs do exist on PCs and perhaps some enterprising 8-bitter would like to give a port over a try.

My brother Ted mentioned that an easy to use ST archive program would be much appreciated and would see at lot of use if it is done right. I cannot guarentee that any program I write will replace arc and lzh now that shell programs are available for them. However I have decided to give it the good old college try anyhow and do my best to give them the boot.

According to the computer journals at UBC the Lemple-Ziv algorithm used in arc and lzh is over 14 years old and it appears that better ones are now available. For instance the ancient unix commpact command using the Huffman algorithm crunches formated text to about 60% of its orginal size, while standard Lemple-Ziv reduces it to 38% and Dynamic Markov Compression rams it down to 27%. *1 How far down can text be crunched? With curiosity peaked I aim to find out.

*1 "Data Compression Using Dynamic Markov Modeling" 541-550 Vol.30 No.6 1987 The Computer Journal

by Douglas Skrecky

General Meetings

by Rowland Grant

The November general meeting featured computer communications. Mike Harrison discussed the whole field of modem communication, and very clearly too. As a demonstration, Mike used his 8-bit system with Bob-Term, an excellent public domain terminal program. There was some discussion about communicating with networks and also with mainframes. Apparently local universities use Kermit protocol. There were not enough outlets to run Ted Skrecky's ST and Mike's XE at the same time, and we didn't have a power bar. Dennis Ellis saved the day by bringing in his extension cords. As usual, Ted was busy with the ST library throughout the meeting.

Over the last few months some members have made donations to the Club library. Thanks are due to Ted Skrecky for numerous issues of ST Action, ST Format and ST User, to Dennis and Jenine Ellis for some back-issue of Antic, and to Dr. Myre Sim for copies of ST Informer. Doug Skrecky, our Vancouver member and correspondent has kindly sent us some PD programming software, namely Sozobon C and Gulam Shell. These will be put in the library when we have found out how to run them properly (without getting two bombs on the screen). There is no general meeting in December, so this year the December executive meeting was made into a party to which all members were invited. Thanks to Gordon Hooper who organized it and Rick Hanson who arranged for some of the catering, the meeting (party) went very well. Gordon's powerful punch livened up the meeting a bit but the executive managed to get through the agenda anyway.

We received a very complimentary letter from Dr. Myre Sim and a donation of fifty dollars. Dr. Sim is the author of a series of authoritative books in the field of medicine. In publishing his current book, he has found it necessary to purchase a '386 clone. It seems that few if any book publishers use Atari ST's these days. The executive voted thanks to Dr. Sim, and as a gesture, we will keep Dr. Sim on the membership list.

At the January executive meeting the main item of business was the forthcoming Annual General Meeting and election of a Club executive. The old executive usually brings forward a partial slate of candidates, however, all positions are open. We welcome the participation of anyone interested in helping to run the affairs of the club, either in a named position or as a director at

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Peeking Around

by Gordon Hooper

MIKE HARRISON back to work at his security business. I guess he got tired of relaxing ... Welcome to new members MARK ERICKSON and BARB JAMES ... PHIL CAVANAGH (The Griffin to you modem freaks) is rumoured to be buying an IBM clone. Lots of luck playing around with MS-DOS, Phil ... TED SKRECKY will be taking the back-up eight-bit library to his home to do some work on it. Should slow down his on-going acquisition of bimbo pictures ... The January meeting will feature a door-prize draw for commercial software for the eight-bit and ST. All members are eligible. You can't win if you aren't there ... It appears RON DE POL will keep his new Russell Bookstore at the 700 block Yates Street address. Ron has his wife, DIANA, his children and even his father working for him at the store. I certainly won't be the one to breathe the word "nepotism" around, Ron ... ROWLAND GRANT spending time during the Christmas season in Vancouver at an ethnic party ... JOHN PICKEN receiving a letter (in French) from Club Cenacle in France. John has been handling our club correspondence with them ... GEORGE ROSE working overtime in the new year ... How come I can't watch the Seahawks in post-season play this year, BOB NEX? ... Thanks to all the club members who attended the Christmas party at my house. A good time was had by all (hopefully). Thanks again to RICK HANSON for providing the food ... Don't forget to phone GORD at 386-0857 with news, gossip and embarrassing anecdotes about fellow club members ...

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large. Some of the tougher jobs such as the newsletter and the library have always involved most of the executive in one supporting role or another. When it comes to running our Club, there's lots of work for everybody. Our executive meetings do have an agenda and minutes and all that, but most of the time is spent in discussions off the topic. The discussions are usually about Atari affairs, and are frequently so interesting that the chair waits until the issue has been talked out before returning to the agenda. More than one person has commented that executive members have all the fun.

Another reason that you should attend the Annual General Meeting in January is that door prizes will be awarded. Thanks to donations from Ted Skrecky and Mike Harrison, the prizes will be commercial software for the ST and the XL/XE. Our annual financial statement was not ready on January 2nd when we held the executive meeting, but it will be presented for approval at the general meeting. If it's available in time, the statement should appear in this newsletter.

by Rowland Grant

G.C.A.C.E. Library News
Atari ST+Mega

There has been a fair amount of activity in the ST Library over the past few months. I would first like to start by thanking Dr. Sim for donating the May 1991 and June 1991 editions of the ST Informer newspaper, published in the USA. This is quite a good read. Not only does ST Informer contain all the latest in ST news for North America, there are many good articles on hardware, software and just about anything else you can think of. There is even a special games section called ST Gamer! Club members wishing to borrow these two issues can contact George Rose (652-0572), the keeper of the GCACE 8-bit software and 8-bit/ST magazine library.

Eight ST magazines were recently aquired by GCACE. If you have been waiting anxiously for months (perhaps years) for the chance to read the October 1989, September 1989 or the July 1990 issues of ST Format, you can breath a sigh of relief because we have now got them. The One magazine is a publication dedicated to games for the ST. We have the November 1990 and August 1991 editions. The August 1991 issue of ACE magazine is another recent aquisition. It covers games for a number of different computer systems, including the ST. Also, loyal followers who missed purchasing the October 1991 edition of Computer Gaming World can borrow the copy that now resides in our archives. It has a big article on Ultima VII, the latest installment of the #1 fantasy

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G.C.A.C.E. EXECUTIVE COMMITTEE

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role-playing game for all types of computers. Last but not least, club members who are slanted more towards word processing or on articles on hardware may want the August 1990 or October 1990 issues of Atari ST User.

All of the disks in the ST public domain library are sporting new, nifty, high-tech printed labels. The fancy borders for the labels were done by using a computer language called Action! on my 800XL. With it, I was able to send the proper codes to my Raven 24pin printer in order to gain access to the alternate Epson LQ-2500 Graphic Character SET. It has all sorts of strange symbols that can be used to create boxes around regular text. It is unfortunate that most word processors will only allow you to use the normal character set on your printer. However, if you are lucky enough to own a copy of the PaperClip word processor for the XL/XE, you will not have to learn about computer languages as PaperClip has a special feature which will allow you to toggle the printer between different character sets. As yet, I have not seen any text editors that will do this on an ST.

Several years ago Steve Lemmen donated six issues of the ST News Disk, a public domain disk magazine published by a group in the Netherlands. These disks have been collecting dust until just recently when I decided to have a look at them again. What I discovered was a disk mag of very high quality. No doubt these disks should have been made available to club members along time ago. The main program, with its various magazine features accessed by drop-down menus, was written in GFA Basic. Those people in the Netherlands are obviously enthusiastic GFA programmers as with each new issue improvements were made. ST News has a little something for just about everybody. There are numerous articles on programming, interviews with famous Atarians, game reviews & cheats, hardware reviews and more. Also, each issue has a special picture of the month and a special tune which can be toggled off. My favourite tune out of these bunch of disks is on the Sept 87 issue. The ST News disks that Steve donated are as follows: January 1987, February 1987, July 1987, October 1987, September 1987, and July 1988.

The GCACE ST library now has 68 disks worth of public domain software. Most of the software on disk #42 to disk #68C has been donated to us by Bob Lussier, our Vancouver software contact. Thank you Bob and also thanks to everyone else who has taken the time to help us out! Some of the programs are bound to generate a significant amount of interest. I have frequently used Version 2.6 of the ARCShell program, a copy of which is on Disk #45. It uses a compression routine called LZH which is a big improvement over ARC. Besides good utilities, we also have a few awesome graphics demos such as The California Raisins Demo (Disk #50) and impressive games such as Dragon Lord (Disk #45), a Bruce Lee Kung Fu game. Hopefully, if there is enough space in this issue of XIO 3, a listing of the software on Disk #42 to Disk #68C will be published. If not, you can always visit the Pothole BBS (642-6795) or bring a blank disk to the meeting and aquire a complete copy of our ST catalog.

That's it for this month. As usual, at the next club meeting, the ST library will be open for business so bring along those blank disks and we will see what we can do about filling them up!

FLOPPYS??

THE PARKSVILLE FLOPPY

As you know, our intrepid editor, Bob Nex, can handle newsletter text files on standard 5.25 or 3.5 inch floppy disks. What some of you don't know is that Bob doesn't have an ST. He uses a PC clone to port the files on the 3.5 inch disk via null-modem to his Atari XE. Unfortunately the PC clone with DOS can only read standard IBM formats. So if you are using an ST, make sure that your format is 720K double sided, and don't put the files in folders.

For the November/December newsletter, Bob received a couple of ST disks using non-standard formats. So Bob bought them over to me to copy onto a 720K disk. First I showed Bob my ST system running under Neodesk 3, which I had recently acquired. Then I copied the files from one of the disks with no problem. However, the fun began when I tried to get the directory on a disk sent in by Chris Prince.

The disk seemed to be filled with an incredible number of files. The files had unintelligible names and even

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the Pothole bbs

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stranger extensions. The disk was displayed as having minus nine zillion bytes! I tried another disk, everything was fine. Back to Chris's disk, and all strange again. To examine this curiosity, I clicked on disk information. Instead of getting the usual readout, the disk drive made a loud noise like an old fashioned door buzzer. I tried a second time and got the razzberry again. I turned to Bob. He nodded and said "format the sucker"! So I clicked on format and chose the options.

When formatting began, the strange screen vanished, instead we saw one small text file. "Hey, wot's that?" said Bob. I couldn't remember how to stop Neodesk during a format, so I pressed all the keys and it stopped. A box was displayed which questioned my motives. This was followed by another box warning me not to try to copy files to a partly formatted disk ever again! The file was viewed and seen to be whole, so I copied it to Bob's PC disk. Thus Chris's article made it to the newsletter.

Fortunately I had been showing off Neodesk. To help the hapless, Neodesk formats the disk from back to front, the index and FAT tables are the last to go, so some files might be salvaged from a partly formatted disk. What caused the strange effects to begin with, I don't know. It would seem that the text file was being treated as if it was the directory listing. The stepper motor in the disk drive tried to access minus nine zillion bytes and went berserk! But why did everything start acting normal under the threat of format?

Well, as most of our members know, this island is a strange and spooky place. According to one of the professors at our university, the island has more than its share of ghosts and nature spirits, apparently due to the dampness. He says that a surprising number of houses in Oak Bay and around the Gorge are, or have been haunted. There are some reports that supernatural events become more frequent as one goes north up-island. Perhaps that's the explanation for our disk trouble.

Chris lives in Parksville. I am aware of reports of fiery lights seen at night on the beaches and sometimes in the woods near Parksville. These lights are usually accompanied by shrieks and weird laughter. Bottles and beer cans have been seen flying through the air in the vicinity. All this poltergeist activity could possibly rouse the nature spirits to seek the town for a bit of peace and quiet. These spirits are said to be slightly magnetic. Possibly one found Chris's disk just the right environment and curled up in the FAT table. My drive read/write head bounced off the spirit and landed in the text file, causing all the trouble. I suspect that the spirit wouldn't want zeros written all over it, so when I started to format the disk it cleared out. I haven't found the spirit on any of my disks, but Ted Skrecky has an ST Format magazine disk that now seems to be haunted. Maybe that's where it went.

by Ted Skrecky

CAPTIVATING HINTS (PART TWO)

[Due to the fact that I became totally addicted to playing Captive for the last few months, I was unable to write Part Two of Captivating Hints for the November/December issue of XIO 3. Fortunately, I recently visited my doctor and had myself heavily sedated so I would be able to calm down and finish writing this article. At the end of Part One, I was discussing some of the uses of the mapper device.... I shall continue from where I left off.]

Elevators and stairs will allow your team of four robots to move up and down the various levels of a prison. During your travels, you may also find holes in the floor or in the ceiling. Floor holes are easy to spot but, due to the design of some of the ceilings, openings in the ceiling can be very hard to locate. In these cases it is best to consult the mapper. Any holes you have walked by will be depicted on the mapper screen with a yellow and green dot. You will need to use an Anti-Grav devscape to get through a gap in the ceiling. Before turning off the Anti-Grav, don't forget to move over at least one space. Guess what will happen if this device is switched off while your androids are hanging above a hole in the floor!

In certain parts of some of these bases, the lights have been turned off in order to conserve energy. Walk into such an area and you will not be able to see anything. However, since monsters love to eat massive quantities of carrots, they will have no difficulty targeting your robot chums. A massive gun battle in the dark usually ends with parts of 4 dead androids strewn about the corridors. Buying a Visor (Optic #8) and activating it will allow you to see a bit better.

Back in the bad old days, when these prisons were being built, a few special-effects technicians were hired to install some fake walls. These walls may look just like the real thing but they aren't really there. One way of determining if a wall is solid is to slam into it. This, of course, is rather painful. I personally recommend buying a Visor-Corrector (Optic #7). This device should be switched on at all times as it could save your robobuds from a surprise attack. At higher levels, evil creatures are known to hide behind fake walls. I remember one time while my robots were merrily strolling along, the androids in the back suddenly started to get hit by gun fire. I quickly turned them around and saw bullets come flying out of one of the walls. Seconds later, a big ED-R19K robot fighter emerged from the wall, its guns blazing a continuous stream of bullets. If one of the droids had a Visor-Corrector activated, this unpleasant surprise may not have occurred.

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There are three shield devices that can be purchased to help protect your robots from enemy attack. There is the Shield (Devscape #2), the Fire-Shield (Devscape #3) and the Deflector (Devscape #8). Most of these items will not completely absorbed the impact of incoming projectiles so your droids will suffer some damage each time. Also, everytime your team is hit, the shield is weakened. I once bought a Devscape #3, a fairly costly item, and it was basically completely destroyed after a very short period of time. I believe it is best to spend your hard-earned cash on ammunition for weapons instead of purchasing shields. As long as your androids don't stand in one spot for too long, they aren't going to have too much use for a shield as any oponents will have few easy oportunities for scoring many direct hits.

Some weapons are better than others. An Ag-Scan (Optic #1) will list the amount of damage inflicted on an enemy. This device maybe worth buying as it could help you determine if one particular weapon is better than another. Although more skill is required to successfully operate the best Ion-Pulse laser gun, I have found, by observing the read-out from the Ag-Scan, that the best Booster machine gun, a lower level weapon, will do a better job of killing monsters.

There are still a few other optics and devscapes that I have not yet talked about but they are not really that important. I have bought all of them at one time, tested them out, and then sold them back to a store. The Magna-Scan (Optic #5) is a compass. The Body-Scan (Optic #6) is a quick reference screen for your droids. The Greaser (Devscape #4) will oil the limbs of the robots so movement is slightly faster. The Power-Sapper (Devscape #5) should not be used as it will complete absorbed the energy of the android using the device. The Fixer (Devscape #6) will do temporary, partial repairs to your droids. It will make it possible for your team to reach the nearest repair shop. However, I have never bother much with using this device as when my robot buddies get very badly damaged, I usually kill them and start again from the last saved position. I don't like to pay for repair bills! And lastly, the Re-charger (Devscape #7) will add a small amount of energy into the chest unit of a droid.

At higher levels, on some bases, you will have a long trek to get to a power outlet. A Re-charger can be used to give you a little bit more energy in order to make it to the next outlet. However, I much prefer using batteries. These containment units can store massive quantities of power, especially if you buy the most expensive battery. Having a battery or two in your pack sack can mean the difference of life and death for your group. Once a droid runs out of energy, it collapses onto the floor. This is especially annoying if it happens while fighting some of the locals.

There are many locked doors in these prisons. Most are opened by pressing the four security code buttons in the correct sequence. With just 4 buttons, there are a limited number of combinations so it should not take long to open a door. However, if you happen to find a die, don't throw it away. Instead, put the die in the hand of one of your robots, stand in front of a door, and roll it. The die will tell you the combination for each door. A very useful item, I would say.

Not all doors use a four button security sequence to help keep out unauthorized intruders. There are four other types of security systems. The first, which is easy, requires you to pull the correct levers. The second requires a password. The third requires you to press one or more buttons on a eight button panel and the fourth requires you to touch only certain lines on a circuit board panel so the lock on the door will be released. The information needed to open the second, third and fourth type of special doors are written on clipboards. The prison file clerk union must currently be on strike as these clipboards can be found scattered around on the floors. Also, when you no longer need the clipboards, keep in mind that you can sell them to stores. It is advisable to sell the clipboards only after you have completed mapping the prison and are ready to blow the generators.

Besides doors, from time to time, you will find mines placed on the floor. Don't walk on them! Fortunately, there are several ways of destroying a mine without blasting the hands and other parts off your robots. Charging your hand icon by sticking it in a power outlet and then flinging an energy bolt across the mine will cause it to explode. However, make sure your mechanical friends are more than one space away from the mine when it blows. If the mine is next to a wall, all you have to do is throw an object at the wall and it will fall on the mine. Balls can also be used to detonate mines. Just bounce one off a nearby wall. The ball will bounce back and forth a few times before dropping to the floor. On the first attempt, the ball may not land on the mine. If this is the case, try again and eventually you will be rewarded with a big explosion!

There are many methods that can be used to murder your droid pals. I bet you are wondering why you would want to purposefully kill each android. The reason is simple. If you spend too large a precentage of your gold on repairing badly damaged robots, you will find you have no money left for buying neccessary items such as better armour or ammunition for guns. Without ammunition, the androids are going to die real soon no matter what you do so you might as well not waste time repairing them in thefirstplace.Aslongasyousaveyourgame frequently, it will not be too much of an inconvenience to kill the robots and then restart from the last saved position. Sometimes, knowing what is lurking around the corner will help you in devising a better battle strategy!

There are three popular ways to murder the members of

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your team. Certain doors will slide up when touched with the hand icon. The robots can be killed by having them stand beneath the door. It will repeatedly bang on the heads of the droids. As long as their armour is of cheap quality, death will come quickly. The fastest method for killing your team, even if they have excellent armour, is to throw away the chest units of each robot and then bang into the nearest wall. But, if you want to have some fun, I recommend firing projectile weapons down a long corridor and then run as fast as possible after them. You will find that the robots will catch-up to the projectiles and the bullets, missiles, or whatever will impact on the armour of the two droids in the front. Fun!

There is only one negative comment I could make about Captive. There is no real satisfactory conclusion to this game. All dungeon and dragons games usually have an ending in which you save the world, get the reward and marry a beautiful princess and live happily ever after in a huge 50 room castle. With Captive, once the droids have found the cell you are held in, you are givin the option to call it a day or to let the battle commence. If you opt for the second senario, a wall opens up and a monster grabs you and takes you to a new prison. Your droids then start the search for you all over again. Until you call it a day, the game will never end.

However, I do have some good news. Even after having rescued myself three times, I still enjoy playing Captive. Unlike most fantasy role playing games, the interior design of each base is randomly generated. The random generator routine happens to be so sophisticated that I always find myself compelled to discover what is around the next corner. Also, the game becomes a bit more difficult as you progress your way to higher levels. It can be said that Captive is similar to most games played in the arcades as there are an infinite number of levels. The hacking, blasting and nuking never ends!

I have tried out many pieces of entertainment software since I bought my ST a few years ago and even though some of the titles are of very high quality, such as Dungeon Master or Ultima V, I happen to rate Captive, written by Tony Crowther, as my #1 favourite game. Tony wanted to write a game which gave excellent value for money and I am pleased to say he succeeded in achieving this goal. Before buying a copy of "Attack of the Undead Radioactive Gerbils From Outer Space" or any other such games, it would be wise to first have a look at Captive. I doubt that Gerbil game could be as good as Captive!

by Ted Skrecky

STRLINGS FACTORIAL

The factorial (symbolized by an exclamation mark '!')of a number is that number multiplied by all the numbers before it. This is limited to positive whole numbers. Zero! is defined as 1.

The approximating formula is exp(n*ln(n))*sqrt(2*pi*n)/exp(n) in the Pascal version. The C version is slightly different due to different function names.

ThePascalversionwasfirstwrittenonaVAX mini-computer and has not been tested on an Atari, but itonlyusesANSIPascalcommands(standard semi-universal stuff) so it should work right with almost all compilers.

The C version was written with Mark Williams C (v 3.0.9) and it works, on my computer at least. The only stuff to be concerned about if you don't have a Mark Williams compiler are the AES routines (Application Environment Services). In my experience, most compilers use something similar.

AES lines in the program that should be checked are, in descending order, #include <aesbind.h>, appl_init(), evnt_keybd(), appl_exit(). The only purpose of these four lines is to keep the program from ending until the userpresses"anykey".Thisisthejobofthe evnt_keybd() function, it is part of the AES library and its mighty task is to wait for a key to be pressed, then it lets the program continue.

"appl_init()" is required at the beginning of all programs that use AES; its purpose is to tell AES that the running program requires its help. If this command is left out of the program, TOS gives a "bad function #" error. "appl_exit()" tells AES that it can return to never-never land because the program is about to exit.

```
#include <stdio.h>
#include <aesbind.h>
#include <math.h>

\* This program uses Stirlings factorial aproximation
formula to find the factorial of a user specifed number
*/
main()
{
   double fac,n;

   appl_init();

      printf("\r\r\r\r\r\r\r\r\n\r  Factorial  Calculator
\n\r\n");
```

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```
   printf("Enter the number : ");
   fflush(stdout);
   scanf("%f",&n);
   while(getchar() !='\n');

   printf("Computing the factorial of : %-.2f \n\r",n);

   if (n == 0)
      printf("\n\r The number is zero, the factorial is
1 \r\n");
   else if (n < 0)
 printf("\n\rThenumberisbelowzero,the
factorial is undefined \r\n");
   else if (n > 0) {
      fac=exp(n*log(n))*sqrt(2*3.1415*n)/exp(n);
      printf("\n\r The factorial is : %-.3g \n\r",fac);
   }

   printf("\n\r Press any key to quit \r\n");
   evnt_keybd();
   appl_exit;
   exit(0);
}

program 2
{%F-}
program Stirling (input,output);

{This program calculates the factrorial of the number
"n" using Stirling's formula, the factorial is displayed
on the terminal and if it is than Maxint
it is displayed as an integer, otherwise it is displayed
as a real.  On the vax the user entered number "n" must
be less than 26 or the factorial will exceed
max real.   The factorials of negitive numbers are
undefined and the factorial of 0 is 1.  If either values
are entered then the program will display the
appropriate message.}

const

      pi = 3.141592654;

var

      n,factorial:real;
      int:integer;

BEGIN
      writeln;
      writeln('Factorial calculator');
      writeln;
      write('Enter tne number:');
      readln(n);

      IF n=0 then
          writeln('The number is zero, the factorial is
1')
      else IF n<0 then
         writeln('The number is below zero, the
   factorial is undefined')

      else if (n>26) then begin
         writeln('The number must be less then 26');
      end

      else begin
         If (n>0) then
  factorial:=(exp(n*
 ln(n))*sqrt(2*pi*n))/(exp(n));

         IF factorial < maxint then begin
int := round(factorial);
              Writeln('The factorial is',int:9);
         END

      else
         writeln('The factorial is:',factorial:9:2);
      end
  END.
```

BY CHRIS PRINCE

DON'T MISS THE
ADVENTURES OF CAPTAIN SMUT
(PRINCE OF PORN)
AND THE
LUST-CRAZED STEWARDESSES
COMING SOON
TO A BBS NEAR YOU
(ADMISSION RESTRICTED)

GARDEN CITY ATARI COMPUTER ENTHUSIASTS
TRIAL BALANCE
DECEMBER 31, 1991

CURRENT ASSETS		
1010	CASH ON HAND	150.00
1020	BANK OF MONTREAL	496.42
CURRENT LIABILITIES		
2010	ACCOUNTS PAYABLE	176.55
CAPITAL		
3010	CAPITAL	(822.97)
INCOME		
4010	MEMBERSHIP DUES	(1,100.00)
4020	PSAN SALES	(132.00)
4030	DONATIONS	.00
4040	BANK INTEREST	(12.32)
4050	MISCELLANEOUS	(34.16)
EXPENSES		
6010	PSAN PURCHASES	197.34
6020	MAGAZINE SUBSCRIPTIONS	.00
6030	NEWSLETTER & PRINTING	206.49
6040	POSTAGE	198.38
6050	DISKS	43.45
6060	ROOM RENTAL	170.25
6070	SOCIETY ACT FEES	15.00
6080	OFFICE SUPPLIES	4.06
6090	BANK CHARGES	5.00
6100	MISCELLANEOUS	107.47
OTHER EXPENSES		
9999	INCOME TRANSFER	331.04
TOTAL		.00

AS ENTERED BY MICHAEL HARRISON